UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,283	01/16/2002	Hun Gun Park	RPL-0026	2369

34610 7590 02/26/2004

FLESHNER & KIM, LLP
P.O. BOX 221200
CHANTILLY, VA 20153

EXAMINER	
LEFLORE, LAUREL E	
ART UNIT	**PAPER NUMBER**
2673	5

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/046,283	PARK, HUN GUN	
	Examiner	Art Unit	
	Laurel E LeFlore	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. The specification and abstract are accepted as amended. Objection to the specification and abstract are withdrawn.
2. Applicant's arguments, see Paper No. 4, page 14, filed 15 January 2004, with respect to the 35 USC § 103 rejection of claims 1-9 have been fully considered and are persuasive. The 35 USC § 103 rejection of claims 1-9 has been withdrawn.
3. Applicant's arguments filed 15 January 2004 have been fully considered but they are not persuasive.

   Applicant's arguments regarding the 35 USC § 112 rejection of claims 1-9 are not persuasive. Applicant argues in Paper No. 4, pages 12-13, that "the basis of the claimed invention is not in the 'direction' in which the scan pulse is applied to electrodes, but rather in which order the scan pulse is applied to scan electrodes." In one embodiment, as illustrated in figure 7, the scan pulse is applied first to scanned-electrode line 1, then 2, and so on until 480. This can be disclosed as applying the scan pulse to electrodes in the order of 1 to 480 or as applying the scan pulse to electrodes in the direction of 1 to 480. Either statement has an equivalent meaning that the scan pulse is applied first to electrode 1, then 2, and so on until 480. Thus, the applicant's argument, "Therefore, the scan pulse is not applied in 'two different directions,' but rather is

applied in a different order" is not persuasive, as the two statements have equivalent meanings.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

See Paper No. 3, page 3, for 35 U.S.C. 112 rejection of claims 1-9. This rejection is further applied to claims 10-20.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent

resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 10, 11 and 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Nagano 6,531,994 B1.

In regard to claim 10, Nagano discloses in his "method of driving AC-type plasma display panel and plasma display device " (title), a method of driving a PDP (Plasma Display Panel), comprising: applying a first scan pulse to scan electrodes, wherein each of the scan electrodes are numbered from 1 to N, and wherein the first scan pulse is applied to the scan electrodes in ascending number order from 1 to N; and applying a second scan pulse to the scan electrodes in descending number order from N to 1. See column 13, lines 5-9, disclosing, "in the writing period ADP of the first half of the sub-field,...the odd-numbered scanning lines S.sub.2n-1 are selected in descending order...up to the scanning line S.sub.1". Further see column 13, lines 19-28, disclosing, "After the end of the driving sequence in the first half of the sub-field, the driving sequence in the latter half of the sub-field is performed...the even-number scanning lines S are selected in ascending order, i.e., in the order of the scanning line S.sub.2, the scanning line S.sub.4,...and the scanning line S.sub.2N."

9. In regard to claim 11, Nagano discloses that the charged particles generated by the first and second scan pulses are opposed to each other. Nagano discloses

this problem of excess charged particles, calling it "unnecessary charge", in column 16, lines 39-48. Nagano further discloses in column 18, lines 59-62, that voltages in the odd and even writing periods (Scan pulse is applied during the writing period; See rejection of claim 1.) "are reverse in polarity to each other when the writing discharge is generated." This opposition of charged particles inherently reduces the amount of excess charged particles residually.

10. In regard to claims 14 and 15, Nagano discloses that the first scan pulse comprises multiple odd-numbered pulses and the second scan pulse comprises multiple even-numbered pulses. See column 13, lines 13-18, disclosing that the sustain period is executed on the scan lines to generate the sustain discharge. "Specifically, the sustain pulse is alternately applied between the sustain discharge electrodes X and Y or an AC pulse is applied to the sustain discharge electrodes X and Y." While it does not specifically disclose odd- or even-numbered pulses, it is understood that the multiple pulses, as described, can be seen as a series of one pulses or a series of two pulses and will thus read on the claim language of "comprising".

11. In regard to claims 16 and 17, Nagano discloses that the first scan pulses occur in odd numbered sub-fields and the second scan pulses occur in even numbered sub-fields of a fields. See rejection of claim 10, in which Nagano discloses sub-fields. It is understood that if the sub-fields are numbered 1 to n, that the first scan pulse would occur in sub-field number one, one being an odd number, and

the second scan pulse would occur in sub-field number two, two being an even number.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagano 6,531,994 B1 in view of the Journal of Applied Physics article, "Global breakdown in an alternating current plasma display panel" by Ikeda et al.

In regard to claim 12, Nagano discloses an invention similar to that which is disclosed in claim 12. See 102 rejection of claim 11 for similarities. Nagano does not disclose that the reduction of excess charged particles prevents abnormal discharge or dielectric breakdown.

Ikeda discloses that "undesirable discharge is referred to as global breakdown". Ikeda further discloses that "Global breakdown was accompanied by charge separation...caused by electron transport...The electron transport formed a negative wall charge...When the wall voltage exceeded the insulation voltage of the protective layer, global breakdown occurred." Thus, Ikeda teaches that global (dielectric) breakdown occurs as a result of excess charged particles.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the invention of Nagano with the teaching of

Ikeda, thus having the reduction of excess charged particles prevent dielectric breakdown. One would have been motivated to make such a change based on the teaching of Ikeda that excess charged particles cause dielectric breakdown.

14. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagano 6,531,994 B1 in view of Lim et al. 6,473,061 B1.

In regard to claim 13, Nagano discloses an invention similar to that which is disclosed in claim 13 of the immediate invention. See rejection of claim 10 for similarities. Nagano does not disclose that N, the number of scan electrodes, is 480. Nagano is silent on the point.

Lim et al. discloses an invention in which N is 480. See column 7, lines 16-17, disclosing, "If the picture is displayed in a definition of VGA class, the PDP has 480 row lines." Further see column 7, lines 39-41, disclosing row lines are scanned sequentially. Thus, the number of scan electrodes is 480.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nagano by having 480 scan electrodes, as in the invention of Lim et al. One would have been motivated to make such a change in order to display the picture in a definition of VGA class, as taught by Lim et al. Also, it is common and conventional in plasma displays to have 480 scan lines, as VGA is a common class of display. Further, the number of scan lines, or electrodes, is a matter of routine design choice.

15. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagano 6,531,994 B1 in view of Ide et al. 2001/0026254 A1.

In regard to claims 18 and 19, Nagano discloses an invention similar to that which is claimed in claims 18 and 19. See rejection of claim 10, in which it is disclosed that Nagano applies a first scan pulse from 1 to N and a second scan pulse from N to 1.

In regard to claim 18, Nagano does not disclose that the first scan pulse is applied to scan electrodes from 1 to N/2 and from N/2 to N and the second scan pulse is applied from N/2 to 1 and from N to N/2.

In regard to claim 19, Nagano does not disclose that the first scan pulse is applied to scan electrodes from 1 to N/2 and from N to N/2 and the second scan pulse is applied from N/2 to 1 and from N/2 to N.

Ide et al. discloses a driving method for a plasma display panel in which (see page 1, paragraph [0009]), "Scan-driver circuits 609a and 609b each control n/2 of outputs from the scan driver circuit 602 to the scan electrodes 601-1 to 601-n."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions of Nagano, in which the scan pulse can be applied from 1 to N or from N to 1, and Ide, in which the scan pulse can be applied to a group of N/2 scan electrodes, thus having an invention in which the first scan pulse is applied to scan electrodes from 1 to N/2 and from N/2 to N and the second scan pulse is applied from N/2 to 1 and from N to N/2 or in which the first scan pulse is applied to scan electrodes from 1 to N/2 and from N to N/2 and the second scan pulse is applied from N/2 to 1 and from N/2 to N.

One would have been motivated to combine the inventions since both are methods of driving a plasma display panel and further both are methods of driving the scan electrodes 1 to N.

16. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagano 6,531,994 B1 in view of Alymov et al. 6,587,084 B1.

In regard to claim 20, Nagano discloses an invention similar to that which is disclosed in claim 20. See rejection of claim 10 for similarities. Nagano does not disclose that applying the first scan pulse to the scan electrodes from 1 to N occurs in 16.67 msec. Nagano is silent on the point

Alymov et al. discloses in column 1, lines 50-53, "For example, in order to prevent users from feeling flickers on the screen, the time for controlling illumination of one frame should be limited about 1/60 sec or less, namely 16.67 ms."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nagano by applying the scan pulse to the scan electrodes from 1 to N in 16.67 msec., as in the invention of Alymov et al. One would have been motivated to make such a change based on the teaching of Alymov et al. that such a time of illumination of one frame will prevent users from feeling flickers on the screen.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hirakawa et al. 6,097,358 discloses a method of driving a plasma display that includes sub-fields selected in ascending and descending order.

Criscimagna et al. 4,150,363 discloses a method of driving a plasma display device in which horizontal and vertical lines are broken into groups for driving.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel E LeFlore whose telephone number is (703) 305-8627. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (703) 305-3885. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LEL